June 30, 2003

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor

FROM: Steve Fluke, Environmental Specialist/Hydrology

RE: Technical Field Visit, Link Canyon Portal and Springs, Canyon Fuel Company, LLC., SUFCO, C/041/002

Other Attendees: Pete Hess (DOGM), Craig Hilton (SUFCO), Mike Davis (SUFCO), Tom Lloyd (USFS), Bob Thompson (USFS), and Lance Sudweeks (USFS)

Date & Time: June 25, 2003; 10:00 am

PURPOSE:

Meet with USFS and SUFCO personnel to discuss discharge from Link Canyon portal and protection around the Link Canyon springs (database Ids Pines 100 and GW-21).

OBSERVATIONS:

Observed the portal area first. The west portal had been re-opened this spring to about 50 feet and was gated and locked. There was about four to six-inches of standing water on the portal floor. Tom Lloyd was concerned that the water was not flowing out to the riparian area to the west of the portal. The standing water appeared to be below the level of the discharge area leading to the riparian area. Mike and Craig explained that once they breakout to the west portal, mine water will flow or be pumped to the east portal area which is still filled but has some discharge seeping into the drainage below. This discharge at the east portal area was just a trickle at the time of the site visit. After breakout, water from the mine will be sufficient to also flow out of the west portal into the riparian area. SUFCO will contour the discharge area so the discharge can flow properly to the riparian area.

Next, we drove up to the Link Canyon spring area. We observed the Pines-100 spring located at the base of an outcrop/cliff of Castlegate Sandstone. The spring was developed with an approximately 24-inch diameter steel pipe with perforations and gravel/cobble filter pack located about 1.5 feet away from the cliff/discharge area. The pipe was placed about two feet into the ground surface and had a lid. Spring water collected in the pipe flowed by gravity through piping to two cow troughs about 50 feet below along the canyon road. The water flow was measured with a flow meter and appeared to be recorded at a box mounted on the cliff and powered by a solar panel mounted at the top of the cliff. Based on visual observations at the cow trough, the flow appeared to be less than 0.25 gallons per minute (gpm). Spring GW-21 was located about 30 feet up from the cow troughs and was developed with a 24-inch diameter corrugated plastic pipe. Water from GW-21 flowed onto the ground surface toward the drainage below the cow troughs at an estimated rate of 0.5 gpm. Tom Lloyd marked the fence area to protect the springs from cows that extended approximately 50 feet to either side (southeast and northwest) of Pines-100 and down to the drainage next to GW-21. The fence is to be constructed with pine pole and rebar. In addition, Tom requested that riprap be placed in the drainage area below the cow troughs to mitigate erosion.

RECOMMENDATIONS/CONCLUSIONS:

Review SUFCO's plan submittal to the USFS.

cc: All Attendees
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